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Jianli Shi

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EXAMINER

LANGMAN, JONATHAN C

ART UNIT

PAPER NUMBER

1794

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,919	<b>Applicant(s)</b> SHI ET AL.	
	<b>Examiner</b> JONATHAN C. LANGMAN	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,9-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,9-17 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5, 9, and 12-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 9, the applicant is not supported for the generic second layer comprising a thickness of "between 10". The second layer thickness endpoints can only be 1 and 15, as originally presented in original claim 10, or can be about 15 microns as taught in [0013] of the PG pub of the original specification. The applicant is not supported for the generic second layer being of any other end point.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8, 9-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouloud (US 5,390,432) in view of Vondracek et al. (US 3,551,183).

Regarding claims 1-3, and 10, Bouloud et al. teaches coatings on the interior surface of a steam chamber of a steam pressing iron. The covering on the bottom of the chamber includes a first layer 11 and a second layer 20, wherein the layer 20 is constituted by a water permeable fibrous (porous) material having hydrophilic properties (col. 3, lines 60-65). The first layer 11, is preferably chosen to have good thermally insulating properties, and Bouloud teaches that enamel is a preferred embodiment (col. 3, lines 1-12). Enamel is taught by the applicant to be preferred for the first coating, therefore it is said to also be inherently "essentially impermeable to water" and "thermally insulating". A material and its properties are inseparable, therefore it is expected that enamel will be impermeable to water. It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a prima facie case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 ( Fed. Cir. 1990). The **prima facie** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977). Furthermore Bouloud teaches the use of other materials that are impermeable to water such as cements, calcium carbonate, paints, carbonates and metallic oxides, thus reading upon the instant claim 1 limitation of the first layer being

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“essentially impermeable to water”. The second layer of Bouloud comprises a screen or a fibrous mat (porous), and in one embodiment the screen is coated by a hydrophilic material, preferably it is coated in its entirety with a layer of sodium silicate (col. 3, lines 54-60).

Bouloud does not teach the introduction of clay or alumina particles in this second layer. Vondracek teach a steam chamber of a domestic appliance comprising a coating of sodium silicate. The coating has the addition of hydrated alumina particles. The addition of alumina particles improves the physical strength of the sodium silicate coating, and that the coating decreases the solubility, which are desirable characteristics of coatings in the steam chamber (col. 3, lines 8-63). The coating is cured and dehydrated (col. 3, lines 30-35) resulting in an alumina and sodium silicate coating. Vondracek also teach that colloidal clays may be used (col. 4, lines 20-25) to aid in the deposition. It would have been obvious to a routineer in the art to add alumina to the sodium silicate second coating of Bouloud, in order to increase the strength of the coatings and to decrease water solubility, and in the case of clays, to aid in the deposition of coating sodium silicate as is known in the art.

Regarding claim 9, Bouloud is silent to the thickness of the respective layers, however thicknesses of respective layers, including those instantly claimed are an obvious choice to a routineer in the art and well within the grasp of a routineer in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thicknesses of the first and second layers for the intended application, since it has been held that discovering an optimum value of a result

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effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 8, Vondracek teaches that the alumina particles in the sodium silicate layer have an average particle diameter of 35 microns (col. 3, line 61). However advances in the art of materials science over the years would lead one of routine skill in the art to use a smaller diameter of alumina, including those particle diameters instantly claimed. Basic materials property science teaches that the smaller the particle (in this case a reinforcing particle), will result in stronger mechanical properties to the layer, and increased surface area of the particle in the layer. Therefore It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use a particle diameter of 1 micron or less in order to achieve a desired material composite properties. This determination is well within the grasp of a routineer in the art. Furthermore in regards to the colloidal clay. Hawley's Condensed Chemical Dictionary discloses colloid chemistry as the study of matter having dimensions between 1 nm and 1 micron, thus overlapping the instantly claimed ranges.

Regarding claim 11, since the two layers are in contact with one another and subsequently deposited, they are implicitly adhered to one another (If you turn the device of Bouloud upside down the layers will not separate).

Regarding claims 12-15, Bouloud teaches that the first layer may be sodium silicate (col. 3, lines 7) and the second layer comprises sodium silicate (col. 3, lines 57), they are said to be similar. Sodium silicate in the first layer is said to be to some degree impermeable to water and thermally insulating. The addition of hydrated alumina (water

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being a binder and alumina as a filler) is taught to be an obvious modification to the layer sodium silicate layers of Bouloud.

The instant limitation of selecting different binder to filler ratios and selecting different filler particles sizes for each of the first and second layers to determine the essentially impermeable and hydrophilic characteristics are product by process limitations. The layers of Bouloud expressly are essentially impermeable to water, and are expressly hydrophilic and therefor are said to read on the instant claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”, (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Regarding claim 16, Boulud teaches that all the materials utilized are selected in a manner to withstand thermal conditions normally existing in the chambers (col. 5, lines 5-10) and thus are clearly inherently thermally stable.

Regarding claim 19, the step is a product by process step, the product of Boulud et al. is substantially similar to the product as presented in instant claim 1 therefore it is said to anticipate it. See the product by process case law applied above. Furthermore, Bouloud teaches that it is known and obvious in the art to cure sodium silicate coatings to obtain a more completely reacted coating (col. 3, lines 30-45).

Claims 1, 2, 5, 8-11, 16, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouloud et al. (WO01/68971) referred to herein as WO where (US 6,684,539 is used as the reference) in view of Verweij et al. (US 5,060,406).

Regarding claims 1, 2, and 10, WO teaches a cladding of a vaporization chamber of an iron. The cladding comprises layer 10 which is sodium silicate (applicant's instantly claimed first layer), which adheres strongly to the aluminum body (interior of the steam chamber). The layer is treated with a mixture (col. 2, lines 20-23) of phosphorous bodies that preferably contains colloidal silica (inorganic) particles (col. 2, lines 24-59). It is expected and inherent that the treatment changes the composition of the first layer, since WO teaches chemical reactions of the first layer and the treatment, (col. 2, lines 23-38), thus forming a second layer on top of the first layer. Therefore the sodium silicate layer reads upon the instantly claimed first layer impermeable to water and is thermally insulating, and the second layer that is hydrophilic is the top portion of the sodium silicate layer that is treated with the phosphoric acid and silicate atoms. It is inherent and expected that that the treated layer (second layer) is hydrophilic since



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these layers are similar to the instantly claimed layers. WO does not teach that the silica particles may be clay or alumina particles.

Verweij et al. teach a treatment of a layer in a steam chamber comprising an acid phosphate compound used as the stabilizer of an acid colloidal silica suspension (col. 2, lines 45-50). However Verweij also teach that the colloidal solution may comprise silica, alumina or magnesia (col. 2, lines 60-65). Therefore it would have been obvious to replace the colloidal silica of WO with colloidal alumina as taught by Verweij to be functional equivalents and known alternatives in the art.

Regarding claim 8, colloidal alumina of WO and Verweij reads on the instant claim. Hawley's Condensed Chemical Dictionary discloses colloid chemistry as the study of matter having dimensions between 1 nm and 1 micron. Given that Verweij discloses colloidal alumina and in light of this definition, this meets the particle size of claim 8.

Regarding claim 9, WO does not teach specific material thicknesses for the layers, however, the thickness of a layer is well within the grasp of a routineer in the art. Furthermore, the applicant has not shown the significance of the film thicknesses. It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use any known thicknesses for the respective first and second layers, including those ranges instantly claimed, as determining a layer thickness has been shown to routine knowledge in the art.

Regarding claim 11, since WO teaches the treatment of a top part of a layer these layers are said to be mutually exclusive and therefor said to be adhered to one another.

Regarding claim 16, the materials of WO are assumed to be thermally stable to some degree, furthermore this is supported because the materials of WO are similar to the materials instantly claimed.

Regarding claims 5 and 17, WO teaches a treatment to form a second layer, wherein the treatment comprises phosphate ions and silicate particles. The phosphate ions are preferred to be aluminum tri phosphate (col. 2, lines 40-43), which is a monoaluminum compound of phosphate.

Regarding claim 19, the step is a product by process step, the product of WO et al. is substantially similar to the product as presented in instant claim 1 therefore it is said to anticipate it. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”, (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292

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(Fed. Cir. 1983), MPEP 2113). Furthermore, it is known to cure these compounds to react together and form a more stable coating.

### ***Response to Arguments***

The 112 rejections over claims 5, 8, 12-15, and 17 are withdrawn in light of applicant's amendments.

The 112 rejection over claim 9 is maintained. The applicant has not persuasively shown that they had in possession, at the time of the invention, the instantly claimed ranges. The Examiner suggests that the applicant amends to the broader range taught in the originally filed specification to overcome this rejection.

Regarding the art rejections, applicant argues the combination of Boulud1 and Boulud2 with Vondracek and Verweij as single references and does not argue the combination of references.

The applicant argues that both Vondracek and Verweij teach a single layer for a steam iron and not a second layer that is deposited over a first layer. Additionally, applicant argues that a teaching of depositing a layer onto a chamber surface can not be used as a teaching of applying that same layer over another layer.

The Examiner disagrees. For reasons of record, the inventions of Bouloud1 and Boulud2 are modified by Vondracek and Verweij, respectively, and it is this combination that must be addressed.

Inorganic particles as taught by Vondracek to aid in the strength and hydrophilic properties of sodium silicate layers would have been obvious modifications to the

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sodium silicate layer of Boulud1, which is used in the same art and context of steam generating domestic appliances.

Bouloud2 (WO) teaches a top layer comprising sodium silicate treated with phosphoric acid and silicate particles. WO does not teach that the silica particles may be clay or alumina particles. Verweij is used as a teaching reference to show that phosphate acid treatments may comprise silica or alumina particles, thereby establishing a functional equivalency between silica particles and alumina particles. For reasons of record alumina would have been an obvious replacement and functional equivalent to the silica particles taught by WO.

Applicant never argues the Examiner's position on the combination of the references and, accordingly, has failed to demonstrate patentability of the present claims.

Moreover, while Vondracek and Verweij do not disclose all the features of the presently claimed invention (i.e. a two layer system), Vondracek and Verweij are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather, these references teach certain concepts; namely, Vondracek teaches adding alumina or clay particles to sodium silicate as a reinforcement, and Verweij teaches that in acid phosphate treatments the addition of silica and alumina particles are functional equivalents. As applied herein in combination

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with the primary references, Vondracek and Verweij render obvious the presently claimed invention.

Applicants' amendments to independent claims 12 and 15 have not added any structural limitations to the claims. The claims merely set forth a two layer system, the first layer essentially impermeable to water, and a second layer that is hydrophilic. The means of achieving these properties through the instantly claimed product by process limitations are largely irrelevant, since they do not impart any structural difference to the presently claimed invention. Accordingly, these limitations are not considered to distinguish over the prior art of record. See the product by process discussion with respect to the 103 rejections, *supra*.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is (571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Timothy M. Speer/  
Primary Examiner  
Art Unit 1794